Sphere Scientific Corporation

MonoSil Microsphere

Description

Microsphere Composition:	Silicon Dioxide
Crystal structure :	Amorphous
Form :	Aqueous dispersion
Approximate Concentration (W/V):	5% solids
Sodium Azide Concentration :	50PPM
Surfactant :	<0.1% (W/V) or None

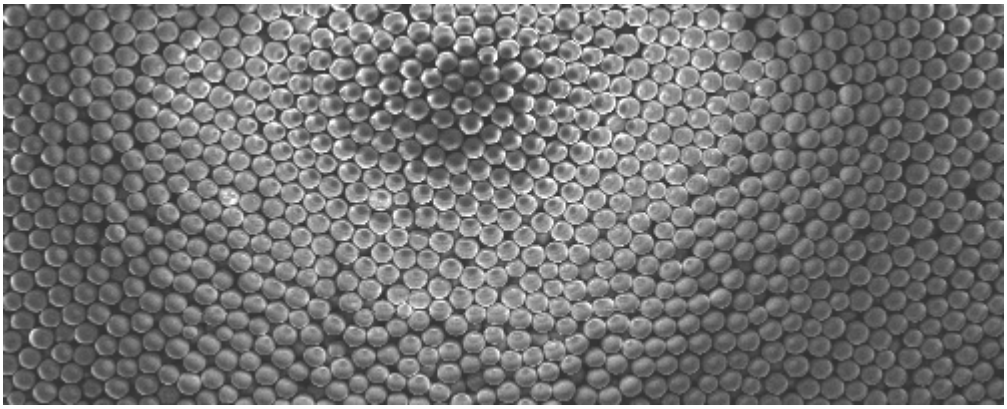
Physical Data

Nominal Diameter :	0.1μm, 0.2μm, 0.3μm, 0.4μm, 0.5μm, 0.6μm, 0.8μm, 2μm, 3μm, 4μm, 5μm, 6μm, 7μm, 8μm, 9μm, 10μm, 11μm, 12μm
Density :	1.9 to 2.3 g/cm3
Refractive Index:	1.40 to 1.46 @ 589 nm, 25℃

Physical and Chemical Properties

Hydrophilic surface, possess many silanol functional groups on the surface, which can be used for a covalent attachment of other ligands;Temperature resistance up to 1000℃; Stable in organic solvents, Soluble in strong bases and in hydrofluoric acid.

Example of SEM picture



5.5um Silica Microsphere

Storage and Handling

Aqueous dispersions of silica particles have excellent stability. Storage at room temperature is possible without bacterial growth. Particles can be washed with organic solvent, air dried and autoclaved. Dispersions of silica particles can be frozen.

Features and Application

1. Used as model systems in medicine, biochemistry, colloid chemistry, and aerosol research;
2. Isolation of nucleic acids,cell separation,and immuno-and DNA-based assays;
3. Flexible silanization chemistries;
4. Low autofluorescence;
5. Unique refractive index and density;
6. Low nonspecific binding of many biomolecules; does not adsorb proteins, ideal materials in immunoassays;
7. Coating avidin,streptavidin,protein A and other proteins;
8. Ease of handling;
9. Optical Tweezer Manipulation;
10. Spacers in flat panel displays (Spacer Silica is tiny spherical silica that fills gaps between LCD filler components);
11. Calibration standards of flow cytometers,particle and hematology analyzers,zeta-potential measuring instruments;
12. Used as particle standards as well as tracers in environmental science, flow visualization and measurements in gases and liquids like Laser Doppler Anemometry (LDA), Particle Dynamics Analysis (PDA), Particle Image Velocimetry (PIV), Digital Imaging Velocimetry (DIV) and Laser Speckle Velocimetry (LSV). High temperature resistance makes them especially well suited for studying flows at elevated temperatures.